

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENT ABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference<br>MH 504801PCT   | <b>FOR FURTHER ACTION</b>   |   | See Form PCT/IPEA/416 |
| International application No.<br><b>PCT/NZ2005/000038</b>   | International filing date ( <i>day/month/year</i> )<br>4 March 2005 | Priority date ( <i>day/month/year</i> )<br>4 March 2004 |                       |
| International Patent Classification (IPC) or national classification and IPC  |   |   |                       |
| Int. Cl. <b>B65D 39/12</b> (2006.01) <b>B65D 41/04</b> (2006.01) <b>B65D 81/32</b> (2006.01)<br><b>B65B 31/02</b> (2006.01) <b>B65D 41/62</b> (2006.01) <b>B65D 85/72</b> (2006.01)<br><b>B65D 1/02</b> (2006.01) <b>B65D 51/18</b> (2006.01) |   |   |                       |
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1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☒ (*sent to the applicant and to the International Bureau*) a total of 3 sheets, as follows:
    - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (*sent to the International Bureau only*) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
 

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|---|---|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report   |
| <input type="checkbox"/> Box No. II           | Priority  |
| <input type="checkbox"/> Box No. III          | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV           | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI           | Certain documents cited   |
| <input type="checkbox"/> Box No. VII          | Certain defects in the international application  |
| <input type="checkbox"/> Box No. VIII         | Certain observations on the international application   |

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|---|---|
| Date of submission of the demand<br>6 September 2005  | Date of completion of this report<br>01 February 2006                               |
| Name and mailing address of the IPEA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaaustralia.gov.au<br>Facsimile No. (02) 6285 3929 | Authorized Officer<br><br><b>ADRIANO GIACOBETTI</b><br>Telephone No. (02) 6283 2579 |

**Box No. I**      **Basis of the report**1. With regard to the **language**, this report is based on:☒ The international application in the language in which it was filed☐ A translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of:☐ international search (under Rules 12.3(a) and 23.1 (b))☐ publication of the international application (under Rule 12.4(a))☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):☐ the international application as originally filed/furnished☒ the description:pages **1-4, 6-14** as originally filed/furnishedpages\* **5** received by this Authority on **22 December 2005** with the letter of **22 December 2005**

pages\* received by this Authority on with the letter of

☒ the claims:pages **16** as originally filed/furnished

pages\* as amended (together with any statement) under Article 19

pages\* **15, 17** received by this Authority on **22 December 2005** with the letter of **22 December 2005**

pages\* received by this Authority on with the letter of

☒ the drawings:pages **1/14-14/14** as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.3. ☐ The amendments have resulted in the cancellation of:☐ the description, pages☐ the claims, Nos.☐ the drawings, sheets/figs☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).☐ the description, pages☐ the claims, Nos.☐ the drawings, sheets/figs☐ the sequence listing (*specify*):☐ any table(s) related to the sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

|                               |             |     |
|-------------------------------|-------------|-----|
| Novelty (N)                   | Claims 1-22 | YES |
|                               | Claims      | NO  |
| Inventive step (IS)           | Claims 1-22 | YES |
|                               | Claims      | NO  |
| Industrial applicability (IA) | Claims 1-22 | YES |
|                               | Claims      | NO  |

## 2. Citations and explanations (Rule 70.7)

The following documents identified in the International Search Report have been considered for the purposes of this report:

D1: US 6688081 B2 (BOYD)

D2: US 5103990 A (IRWIN)

D3: US 4424659 A (PERIGO et al.)

D4: US 3057537 A (POLLOCK)

D5: US 4557398 A (HAMBLETON et al.)

Novelty (N) and Inventive Step (IS): Claims 1-22 (YES)

The invention relates to an expandable seal within a neck finish of a container which is capable of movement with the neck finish to compensate for vacuum forces during cooling of the liquid following sealing of the container. None of the cited documents fairly teach or disclose all of the features of each of the independent claims. Therefore all of the claims are considered to be novel in light of the above documents.

Additionally, the claimed invention is not obvious in the light of any of the cited documents nor is it disclosed in any obvious combination of them. It is also considered that it would not be obvious to a person skilled in the art in the light of common general knowledge either by itself or in combination with any of these documents.

Therefore the subject matter of these claims meets the requirements of Articles 33(2) and 33(3) of the PCT with regard to novelty and inventive step.

Industrial Applicability (IA): Claims 1-22 (YES)

The invention defined in the claims is considered to meet the requirements of industrial applicability under Article 33(4) of the PCT because it can be made by, or used in, industry.

It is a further object of one possible embodiment of the present invention to provide a headspace displacement method whereby a moveable seal is applied to the neck finish that is moveable into the container under the effect of vacuum pressure alone.

- 5 It is a further object of one possible embodiment of the present invention to provide a headspace displacement method whereby a seal is applied to the neck finish that provides a protected pocket within the capped neck finish for additional commodities to be placed.

- 10 A further and alternative object of the present invention in all its embodiments, all the objects to be read disjunctively, is to at least provide the public with a useful choice.

### **Summary Of The Invention**

- 15 According to one aspect of the present invention there is provided a container having an upper portion with an opening into said container, said upper portion having a neck finish adapted to include a moveable seal following the introduction of a heated or heatable liquid into the container, said seal being capable of movement within the neck finish to compensate for vacuum forces during cooling of the liquid following sealing of the container.

- 20 According to a further aspect of the invention in a container as immediately above defined in which said seal is of a flexible material having an expandable side wall.

- 25 According to a still further aspect of the invention, in a container as defined in two paragraphs above, said seal is physically moveable relative to the neck finish and towards the liquid in the container.

Preferably a secondary seal may provide a secondary headspace with said seal.

Possibly a commodity may be provided into, or positioned in, said secondary headspace.

- 30 According to a further aspect of the invention a method of filling a container with a fluid includes introducing the fluid through an open end of the container so that it, at least substantially, fills the container, heating the fluid before or after its introduction into the container, heating the fluid before or after its introduction into the container, providing a moveable seal for the open end to  
35 cover and contain the fluid, said seal being capable of responding to the expansion or contraction of the fluid so as to compensate for pressure in a headspace of the container under the seal following sealing of the container.

**Claims**

1. A container having an upper portion with an opening into said container, said upper portion having a neck finish adapted to include an expandable seal following the introduction of a heated or heatable liquid into the container, said seal being capable of movement within the neck finish to compensate for vacuum forces during cooling of the liquid following sealing of the container.
2. A container as claimed in Claim 1 wherein a surface of said seal extends transversely across the neck finish and is adapted to move further into the neck finish as the seal expands.
3. A container as claimed in Claim 1 or Claim 2 wherein said seal is of a flexible material having an expandable side wall.
4. A seal as claimed in Claim 3 in which said side wall has a concertina-like construction providing for said expansion.
5. A container as claimed in any one of Claims 1 to 4 in which the seal includes a rim portion which can engage with a rim of the neck finish.
6. A container as claimed in any one of Claims 1 or Claim 2 in which said movable seal includes a side wall which can be physically moved relative to the neck finish and towards the liquid in the container.
7. A container as claimed in Claim 6 in which the side wall includes a screw thread engageable with another screw thread provided for said neck finish or a cap thereof.
8. A container as claimed in Claim 6 in which the side wall provides a push-fit with the neck finish or cap thereof.
9. A container as claimed in any one of the preceding claims wherein said seal provides a primary seal for the container, a secondary seal being provided for said neck finish over said opening into said container to define a secondary headspace between the primary and secondary seals.
10. A container as claimed in Claim 9 in which a commodity is positioned or positionable within said secondary headspace.

responding to the expansion or contraction of the fluid so as to compensate for pressure in a headspace of the container under the seal following sealing of the container.

22. A container substantially as herein described with reference to Figures 2 and 4, Figures  
3 and 5, Figures 6, Figures 7 and 14, Figures 8, Figures 9, Figures 10, Figures 11,  
Figures 12 or Figures 13 of the accompanying drawings.